

Having thus described the invention, what is claimed is:

1. A process for forming a composite product comprising:
at least partially opening a bundle of wet reinforcement fibers;
removing water from the wet reinforcement fibers to form dehydrated reinforcement fibers;
mixing the dehydrated reinforcement fibers with a resin to form a mixture of the dehydrated reinforcement fibers and the resin;
forming the mixture into a sheet; and
thermal bonding the dehydrated reinforcement fibers and the resin to form a composite product.
2. The process according to claim 1, further comprising:
separating the dehydrated reinforcement fibers from the bundle.
3. The process according to claim 1, wherein the wet reinforcement fibers are wet use chopped strand glass fibers.
4. The process according to claim 1, further comprising:
adding a member selected from the group consisting of chopped roving, dry use chopped strand glass fibers, E-type glass fibers, A-type glass fibers, C-type glass fibers, S-type glass fibers, natural fibers, carbon fibers, aramid fibers, metal fibers ceramic fibers, mineral fibers, graphite fibers and any combination thereof to the mixture.

5. The process according to claim 1, wherein the step of forming the sheet comprises:
passing the mixture consecutively through a first sheet former and a second sheet former.
6. The process according to claim 5, wherein the sheet has a substantially uniform distribution of the dehydrated reinforcement fibers and the resin.
7. The process according to claim 1, further comprising:
transferring the mixture to a filling box tower prior to forming the sheet.
8. The process according to claim 1, further comprising:
passing the sheet through a needle felting apparatus prior to thermal bonding.
9. An apparatus for forming a composite product from wet reinforcement fibers comprising:
a first opener to at least partially open a bundle of wet reinforcement fibers;
a condenser to receive the at least partially opened bundle of wet reinforcement fibers and remove water therefrom to form dehydrated reinforcement fibers;
a blower unit to receive the dehydrated reinforcement fibers and a resin and mix therewith to form a mixture;
a first sheet former to receive the mixture and form the mixture into a sheet; and
a thermal bonder to bond the reinforcement fibers and the resin to form a composite product.

10. The apparatus of claim 9, further comprising:
a second opener to separate the dehydrated reinforcement fibers from the bundle.
11. The apparatus of claim 9, wherein the wet reinforcement fibers are wet use chopped strand glass fibers.
12. The apparatus of claim 9, further comprising a second sheet former to receive the sheet from the first sheet former.
13. The apparatus of claim 9, further comprising a needle felting apparatus to mechanically strengthen the sheet.
14. The apparatus of claim 9, further comprising a filling box tower to receive the mixture and feed the mixture to the first sheet former.
15. A process for forming a fibrous mat comprising:
at least partially opening a bundle of wet reinforcement fibers;
removing water from the wet reinforcement fibers to form dehydrated reinforcement fibers;
forming a sheet containing the dehydrated reinforcement fibers;
adding a binder resin to the sheet; and

passing the sheet through a thermal bonder to cure the binder resin to form a fibrous mat.

16. The process according to claim 15, further comprising:
separating the dehydrated reinforcement fibers from the bundle.
17. The process according to claim 15, wherein the wet reinforcement fibers are wet use chopped strand glass fibers.
18. The process according to claim 15, further comprising:
passing the sheet through a needle felting apparatus prior to curing the binder resin.
19. The process according to claim 15, wherein the step of forming the sheet comprises:
passing the dehydrated reinforcement fibers consecutively through a first sheet former and a second sheet former.
20. The process according to claim 15, further comprising:
transferring the dehydrated reinforcement fibers to a filling box tower prior to forming the sheet.